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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,866	10/23/2003	Paul A. Ward	082278-0235 CSDL-0639CN	6735
48329	7590	09/19/2007	EXAMINER	
FOLEY & LARDNER LLP 111 HUNTINGTON AVENUE 26TH FLOOR BOSTON, MA 02199-7610			CORRIELUS, JEAN B	
			ART UNIT	PAPER NUMBER
			2611	
			MAIL DATE	DELIVERY MODE
			09/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/691,866	Applicant(s) WARD ET AL.	
	Examiner Jean B Corrielus	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-26,36,41 and 42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 24-26,36,41 and 42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Applicant's comment with respect to the outstanding drawing objection has been considered with the following effect. The outstanding drawing objection has been withdrawn.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness or rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 24-26, 36, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over White US Patent No. 5,893,054 in view of Garcia US patent No. 5,412,985 and further in view of applicant's disclosure page 12, lines 9-17.

As per claim 24, White et al teaches Fig. 2, a which produces a sinusoidal signal in response to measurement of a parameter see abstract, line 1, fig. 14 and col. 6, lines 5-20; an analog to digital converter 141 which receives said analog signal and converts the analog signal to a digital signal; a Hilbert transformer approximation device fig. 18 which receives said digital signal and produces the quadrature component of said digital signal by introducing a phase shift to said digital signal see output of 194, and output of 191 the inphase signal corresponds to the output of the A/D converter see col. 22, lines 38-43; an amplitude computation device which receives said I and Q components and computes the instantaneous amplitude of said digital signal according to $a = \text{SQRT}(Q^2 +$

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1²) see col. 21, lines 54-60 and col. 22, lines 43-45; White does not explicitly teach a that the sensor is vibratory accelerometer. It also fails to teach that the phase computation device which receives said I and Q components and computes the instantaneous phase of said digital signal according to $\theta = \text{ARCTAN} (Q/I)^{-1}$ and a CORDIC processor is used to compute the phase and amplitude signal. However, Garcia teaches a system using a vibratory accelerometer see col. 3, lines 40-45 configured to generate a sinusoidal signal and to measure the phase and amplitude of a digital signal using a phase computation device and an amplitude computation devices, respectively, see col. 5, lines 27-29 and lines 55-56. Given that fact, it would have been obvious to one skill in the art to modify white in the manner suggested by Garcia by using a vibratory sensor to generate the sinusoidal and a phase computation device to compute the phase of the digital signal based on $\theta = \text{ARCTAN} (Q/I)^{-1}$ in order to provide proper indication of direction of a vibrating signal so as to adjust system parameter so as to counteract the effect of such vibration. In addition, at page 12, lines 9-17, applicant acknowledges that a CORDIC processor is a well known device used in signal processing for fast digital trigonometric computations. Given that it would have been obvious to one skill in the art to incorporate such a teaching in White and Garcia in order to perform fast digital trigonometric computations.

As per claim 25 the Hilbert transformer see, for instance fig. 18, introduces a predetermined delay into said quadrature component 192.

As per claim 26, the system further includes a delay device 191 which introduces said predetermined delay into said I component.

As per claim 36, see claim 24. In addition, White teaches a filter 143 to attenuate out of band noise in said signal and a further includes a delay device 191 which introduces said predetermined delay into said I component.

As per claim 41, see claim 24. In addition, note that the analog signal generated by White inherently includes both a phase and an amplitude of said parameter.

As per claim 42, see claim 24. In addition, White teaches a filter 143 to attenuate out of band noise in said signal and a further includes a delay device 191 which introduces said predetermined delay into said I component and the analog signal inherently includes both a phase and an amplitude of said parameter

Response to Arguments


4. Applicant's arguments, see page 3, first full paragraph, filed 8/16/07, with respect to the rejection(s) of claim(s) 24-26, 36, 41 and 42 under White have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Garcia, as set forth above. In addition, the Sonnichsen et al reference has been withdrawn and substituted by Garcia.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean B. Corrielus whose telephone number is 571-272-3020. The examiner can normally be reached on Monday-Thursday from 9:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Jean B Corrielus
Primary Examiner
Art Unit 2611

9-14-07